

# Shane Storks

Ph.D. Candidate at University of Michigan

📍 2710 Windwood Drive Apt. 126, Ann Arbor, MI 48105

📞 +1 (586) 354-7105

✉ [sstorks@umich.edu](mailto:sstorks@umich.edu)

🏠 [www.shanestorks.com](http://www.shanestorks.com)

**Artificial intelligence:** natural language understanding, commonsense reasoning, and embodied interactive agents.

## Publications and Manuscripts

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### 2021

Tiered Reasoning for Intuitive Physics: Toward Verifiable Commonsense Language Understanding

Findings of the Association for Computational Linguistics: EMNLP 2021

Shane Storks, Qiaozi Gao, Yichi Zhang, & Joyce Chai

[Paper](#)

[Code](#)

Beyond the Tip of the Iceberg: Evaluating Coherence of Text Classifier

Findings of the Association for Computational Linguistics: EMNLP 2021

Shane Storks & Joyce Chai

[Paper](#)

[Code](#)

Are We There Yet? Learning to Localize in Embodied Instruction Following

Hybrid Artificial Intelligence Workshop at AAAI 2021

Shane Storks, Qiaozi Gao, Govind Thattai, & Gokhan Tur

[Paper](#)

[Slides](#)

### 2020

Recent Advances in Natural Language Inference: A Survey of Benchmarks, Resources, and Approaches

arXiv: 1904.01172 (featured in [ACL 2020 Commonsense Reasoning for NLP Tutorial Reading List](#))

Shane Storks, Qiaozi Gao, & Joyce Y. Chai

[Paper](#)

## Education

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### University of Michigan

Ann Arbor, MI, USA

Doctor of Philosophy

Aug. 2019 - (expected) April 2024

Computer Science and Engineering

- Advised by Joyce Chai. Qualification and candidacy achieved June 2021.
- Current GPA: 3.96

Master of Science

Aug. 2019 - April 2021

Computer Science and Engineering

- Final GPA: 3.96

### Lawrence Technological University

Southfield, MI, USA

Bachelor of Science

Aug. 2014 - May 2018

Mathematics and Computer Science (major); Physics (minor); Honors Program

## Academic and Industry Appointments

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### University of Michigan

Ann Arbor, MI, USA

Graduate Student Instructor	Fall 2021
Teaching assistant for EECS 595: Natural Language Processing (100+ students, hybrid). Support students through office hours, one-on-one tutoring sessions, and an online help forum. Design assignments and projects and their grading criteria, and supervise a team of graders, and occasionally give lectures.	
Graduate Student Research Assistant	Winter 2021
Collaborative research work with Ph.D. advisor, colleagues, and undergraduate mentees.	
Graduate Student Instructor (Half-Time)	Fall 2020
Teaching assistant for EECS 595: Natural Language Processing (80 students, fully remote). Supported students through office hours, one-on-one tutoring sessions, and an online help forum. Designed and grading assignments.	
Graduate Student Research Assistant	Fall 2019 – Fall 2020
Collaborative research work with Ph.D. advisor, colleagues, and undergraduate mentees.	

### Amazon Alexa AI

Sunnyvale, CA, USA

Applied Scientist Intern (Returning)	June 2021 – Aug. 2021
Conducted a self-contained research project on multi-hop reasoning for question answering. Collaborated with Amazon Lab126 mentors Qiaozi Gao and Govind Thattai from the Natural Understanding and Teachable AI teams at Lab126.	
Applied Scientist Intern	June 2020 – Aug. 2020
Conducted a self-contained research project on embodied agent instruction following. Collaborated with mentors Qiaozi Gao, Govind Thattai, and Gokhan Tur from the Natural Understanding and Teachable AI teams at Lab126.	

### Michigan State University

East Lansing, MI, USA

University Fellow	Aug. 2018 – Aug. 2019
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### Universal Logistics Holdings, Inc.

Warren, MI, USA

.NET Developer & Data Analyst	Jan. 2017 – July 2018
Used C#, VB.NET, and .SQL to create and maintain company databases, warehouse management applications, telemetric data stream processors, and big data visualizations.	

### Dominion Technologies Group, Inc.

Roseville, MI, USA

Junior Programmer	June 2016 – Dec. 2016
Used Visual C# to build and modify user interfaces for automotive assembly machines, including fluid fill and alignment.	
Technical Assistant	Sept. 2015 – June 2016
Authored and prepared technical manuals for automotive assembly machines. Synthesized schematic diagrams of fluid and electric circuits with input from subject matter experts.	

## Professional Organizations

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Situated Language and Embodied Dialog (SLED) University of Michigan	Aug. 2019 - Present
Artificial Intelligence Laboratory University of Michigan	Aug. 2019 - Present
Sigma Pi Sigma Physics Honor Society American Institute of Physics	May 2018 - Present
Reviewer EMNLP-IJCNLP 2019	June 2019 - Nov. 2019
Language and Interaction Research Michigan State University	Aug. 2018 - Aug. 2019

## Volunteer Organizations

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Elementary Board Macomb Science Olympiad	Aug. 2014 - Present
OUT! at LTU with Friends Lawrence Technological University	Sept. 2017 - May 2018
Crime Busters Event Supervisor Macomb Science Olympiad	Aug. 2014 - May 2018

## Outreach Events

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MSO Crime Busters Workshop Macomb Intermediate School District	27 Feb. 2015
Organized and directed an engaging two-hour laboratory experiment for about 300 attendees.	

## Honors and Awards

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University Distinguished Fellowship Michigan State University	2018
Dean's Honor Roll Lawrence Technological University	2014 - 2018
Dean's Award for Academic Excellence Lawrence Technological University College of Arts and Science	2018
MAA Student Travel Grant Mathematical Association of America	2017
Wayne H. and Vita S. Buell Honor Full Scholarship Lawrence Technological University	2014
National German Exam Gold Award American Association of Teachers of German	2014

## Graduate Course Projects

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### University of Michigan

Ann Arbor, MI, USA

EECS 568: Mobile Robotics

Winter 2021

Derived and implemented an invariant extended Kalman filter algorithm for harnessing various sensor inputs to localize autonomous vehicles in complex underwater cave systems.

[Code](#)

[Video](#)

### Michigan State University

East Lansing, MI, USA

EECS 598: Special Topics (Situating Language Processing for Embodied AI)

Winter 2020

Probed the fidelity of vision-and-language navigation (VLN) agents when following human instructions to navigate through a virtual environment, and proposed new targeted metrics.

CSE 842: Natural Language Processing

Spring 2019

Fine-tuned state-of-the-art neural language processing models to exceed state-of-the-art results on challenging commonsense reading comprehension benchmarks.

CSE 802: Pattern Recognition and Analysis

Spring 2019

Implemented several statistical and neural computer vision models to achieve high performance on a healthcare-based image classification problem.

CSE 881: Data Mining

Fall 2018

Applied feature-based statistical models to achieve high prediction accuracy in a social media-based ranking problem.

## Technical Skills

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#### Programming Languages:

Python, Bash, C++,  
Java, MATLAB, C#,  
VB.NET, SQL, Prolog

#### Operating Systems:

Windows, macOS, Ubuntu, CentOS

#### Libraries:

PyTorch, 🤖 Transformers, TensorFlow,  
spaCy, CoreNLP, NLTK,  
NumPy, scikit-learn, Pandas

#### Other:

Git, LaTeX, Slurm, AWS, ROS, Docker